

Claims

1. An apparatus in the treatment of the stock passed to a headbox of a paper machine or equivalent, in which the apparatus includes at least two stock chests (10a₁, 10a₂), stock (M₁) from a first stock chest (10a₁) being passed along a line (a₁, a₂) to a hydrocyclone plant (20) in the short circulation of the paper machine or equivalent, **characterized** in that an accept line (a₃) of the hydrocyclone plant (20) is connected with a stock line (b₁) of stock (M₂) fed from a second stock chest (10a₂), and a combined stock flow is passed along a line (b₂) to the headbox (100) of the paper machine or equivalent (FIG. 2A, FIG. 2B).
2. An apparatus as claimed in claim 1, **characterized** in that the stock (M₁) in the first stock chest (10a₁) comprises a stock composition that shall be treated in the hydrocyclone plant (20).
3. An apparatus as claimed in the preceding claim, **characterized** in that the stock (M₁) in the first stock chest (10a₁) contains broke passed from the paper machine.
4. An apparatus as claimed in the preceding claim, **characterized** in that, in addition to broke pulp, the stock (M₁) contains pulp coming from fibre recovery and further mechanical pulp.
5. An apparatus as claimed in claim 1, **characterized** in that the stock (M₂) has been cleaned by hydrocyclones before passing it to the second stock chest (10a₂).
6. An apparatus as claimed in the preceding claim, **characterized** in that the stock (M₂) of the second stock chest (10a₂) contains recycled fibre and/or chemical pulp.

7. An apparatus as claimed in any one of the preceding claims, **characterized** in that the accept line (a_3) from the hydrocyclone plant (20) leads from one of its centrifugal cleaning steps ($20a_1$, $20a_2$, $20a_3$...) to the line (b_1 , b_2) of the stock (M_2) of the second stock chest ($10a_2$) (FIG. 2A).

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8. An apparatus as claimed in any one of the preceding claims, **characterized** in that between the hydrocyclone plant (20) and the first stock chest ($10a_1$) there is a wire pit (11), from which wire water is passed to a deaeration tank ($13a_2$) and further to a machine screen ($14a_2$) and therefrom to a dilution water inlet header (J_2) (FIG. 2A).

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9. An apparatus as claimed in any one of the preceding claims, **characterized** in that the line (a_1) from the first stock chest ($10a_1$) is connected with the wire pit (11), to which wire water is passed from the paper machine along a line (d_1), and that from the wire pit (11) there is a line (a_2) to the hydrocyclone plant (20) to form the feed of its first centrifugal cleaning step ($20a_1$), and that the line (a_1) includes a pump (P_1), and that the line (a_2) includes a pump (P_2), and that a line (C_1) for passing wire water includes a pump (P_3) for causing wire water to flow from the wire pit (11) to the deaeration tank ($13a_1$), from which there is a discharge line (f_1) for deaerated wire water, and that the line (f_1) includes a pump (P_4) from which the wire water is passed through the machine screen ($14a_1$) further to the dilution inlet header (J_2) in the headbox (100) (FIG. 2A).

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10. An apparatus as claimed in any one of the preceding claims, **characterized** in that the line (b_1) from the second stock chest ($10a_2$) leads through a mixing device (12) to a line (b_2) connected to a deaeration tank ($13a_2$), from which there is a discharge line (f_2) further to a pump (P_7), the pressure side of which is connected to a machine screen ($14a_2$), and from which there is a line further to a stock inlet header (J_1) of the headbox (100) (FIG. 2A).

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11. An apparatus as claimed in any one of the preceding claims, **characterized** in that from the wire pit (11) there is a line (e₁) for dilution water leading to the line (b₁) of the stock (M₂) of the second stock chest (10a₂) through the mixing device (12) (FIG. 2A).

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12. An apparatus as claimed in any one of claims 1 to 6, **characterized** in that from the stock chest (10a₁) there is a line (a₁) to a mixing device (120), and from which there is further a line (a₂) to the first centrifugal cleaning step (20a₁) of the hydrocyclone plant (20), and that from the hydrocyclone plant (20) there is further
10 an accept line (a₃) leading to the line (b₁) of the stock (M₂) of the second stock chest (10a₂) through a mixing device (12), and that a line (b₂) leads from the mixing device (12) to a stock inlet header (J₁) of the headbox (100), advantageously through a machine screen (14a₄), and that the line (a₁) includes a pump (P₁₀), and that the line (a₂) after the mixing device (120) includes a pump
15 (P₂₀) (FIG 2B).

13. An apparatus as claimed in the preceding claim, **characterized** in that there is a line (d₁) through which wire water is passed from the paper machine to a wire pit (110), and that pre-deaeration takes place in the wire pit (110), and that there is
20 a line (d₂) through which wire water is passed after the pre-deaeration treatment from the wire pit (110) to a deaeration tank (13a₃), from which there is further a line (f₃) for dilution water leading to the line (b₁) of the stock (M₂) of the second stock chest (10a₂), and that there is a branch line (f₄) for wire water as dilution water leading to the line (a₁) of the stock (M₁) of the first stock chest (10a₂)
25 through the mixing device (120), and that from the line (f₃) of the deaeration tank (13a₃) there is a branch duct (f₅) to a pump (P₄₀) and further to a machine screen (14a₃) and therefrom further to the dilution water inlet header (J₂) (FIG. 2B).

14. A method in the treatment of the stock passed to a headbox of a paper
30 machine or equivalent, in which method a first stock (M₁) is passed to a hydrocyclone plant (20) in the short circulation of the paper machine or

equivalent, **characterized** in that stock is passed as accept from said hydrocyclone plant (20) into connection with a second stock (M_2) and that a combined stock flow is passed to the headbox (100) of the paper machine or equivalent.

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15. A method as claimed in claim 14, **characterized** in that stock (M_1) of a first stock chest (10a₁) which shall be treated with a hydrocyclone is used in the method.

10 16. A method as claimed in the preceding claim, **characterized** in that a stock composition containing broke passed from the paper machine is used as stock (M_1).

15 17. A method as claimed in the preceding claim, **characterized** in that stock (M_1) which, in addition to paper broke passed from the paper machine, contains pulp coming from fibre recovery and/or mechanical pulp is used in the method.

20 18. As method as claimed in any one of the preceding claims, **characterized** in that stock (M_2) of a second stock chest (10a₂), which stock has been cleaned by a hydrocyclone before passing it to the chest (10a₂), is used in the method.

19. A method as claimed in the preceding claim, **characterized** in that stock (M_2) is used that contains recycled fibre and/or chemical pulp.